Tuttle, et al.

Ser. No. 10/045,766 Filed: 10/23/2001

Page 2

Amendments to the Claims:

- 1. (currently amended) A labeled semiconductor material comprising:
- a surface of a semiconductor material silicon carbide; and
- a first metal layer on portions but not all of said surface; said metal layer forming a pattern with rotational symmetry of C_n , where n is at least

2.

Claims 2-3 (canceled)

4. (currently amended) A labeled semiconductor according to Claim 2 A labeled semiconductor material comprising:

a surface of silicon carbide; and

a first metal layer on portions but not all of said surface;

said metal layer forming a pattern with rotational symmetry of Cn, where n is at least

<u>2:</u>

a second metal layer on portions but not all of said surface of said semiconductor material;

said second metal layer forming a pattern different from said first metal layer pattern;

said second pattern having rotational symmetry of C_n where n is at least 2; and wherein each of said first and second patterns forms an X pattern.

5. (currently amended) A labeled semiconductor according to Claim 4 A labeled semiconductor material comprising:

a surface of silicon carbide; and

a first metal layer on portions but not all of said surface;

said metal layer forming a pattern with rotational symmetry of C_n, where n is at least

<u>2:</u>

Tuttle, et al. Ser. No. 10/045,766 Filed: 10/23/2001 Page 3

a second metal layer on portions but not all of said surface of said semiconductor material;

said second metal layer forming a pattern different from said first metal layer pattern;

said second pattern having rotational symmetry of C_n where n is at least 2:

wherein each of said first and second patterns forms an X pattern; and

wherein each X pattern further comprises a tab portion perpendicular to at least one of the arms of said X pattern.

Claims 6-9 (canceled)

- 10. (currently amended) A labeled semiconductor material according to claim 9 1 wherein said metal layer is selected from the group consisting of nickel, titanium, gold, platinum, vanadium, aluminum, alloys thereof and layered combinations thereof.
 - 11. (currently amended) A semiconductor structure comprising:
 - a substrate having at least one planar face;
- a first metal layer on said planar face, and covering some, but not all of said planar face in a first predetermined geometric pattern;
- a second metal layer on said planar face, and covering some, but not all of said planar face in a second geometric pattern that is different from said first geometric pattern; and

an epitaxial layer on the opposite side of said substrate from said planar face and said metal layers.

Claims 12-13 (canceled)

Tuttle, et al. Scr. No. 10/045,766 Filed: 10/23/2001 Page 4

14. (currently amended) A semiconductor structure according to Claim 13 A semiconductor structure comprising:

a substrate having at least one planar face;

a first metal layer on said planar face, and covering some, but not all of said planar face in a first predetermined geometric pattern;

a second metal layer on said planar face, and covering some, but not all of said planar face in a second geometric pattern that is different from said first geometric pattern; and

an epitaxial layer on the opposite side of said substrate from said planar face and said metal layers;

wherein said substrate and said epitaxial layer comprise a semiconductor device.

- 15. (original) A semiconductor structure according to Claim 14 wherein said device is selected from the group consisting of junction diodes, bipolar transistors, thyristors, MESFETS, JFETS, MOSFETs and photodetectors.
- 16. (currently amended) A semiconductor structure according to Claim 14 A semiconductor structure comprising:

a substrate having at least one planar face;

a first metal layer on said planar face, and covering some, but not all of said planar face in a first predetermined geometric pattern;

a second metal layer on said planar face, and covering some, but not all of said planar face in a second geometric pattern that is different from said first geometric pattern; and

an epitaxial layer on the opposite side of said substrate from said planar face and said metal layers;

wherein said substrate and said epitaxial layer comprise a semiconductor device; and wherein said metal layers form an ohmic contact to said device.

Tuttle, et al. Scr. No. 10/045,766 Filed: 10/23/2001 Page 5

17. (original) A semiconductor structure according to Claim 16 wherein said substrate and said epitaxial layer are silicon carbide and said metal layers are selected from the group consisting of nickel, titanium, gold, alloys thereof, and layered combinations thereof.

18. (canceled)

- 19. (original) A semiconductor device according to Claim 14 wherein said device comprises a light emitting diode or laser diode that includes a p-n junction, and with said ohmic contact comprising a layer of nickel on said substrate and a layer selected from the group consisting of titanium-gold alloys and titanium-platinum-gold alloys on said nickel layer.
- 20. (currently amended) A semiconductor wafer comprising:

 a silicon carbide substrate and at least one silicon carbide epitaxial layer;
 respective primary and secondary orthogonal flats;
 respective front and back planar faces;
 a plurality of devices on said wafer;
 each said device having a first metal layer on said planar face, and covering some, but not all of said planar face in a first predetermined geometric pattern;
 and

each said device having a second metal layer on said planar face, and covering some, but not all of said planar face in a second geometric pattern that is different from said first geometric pattern.

Claims 21-26 (canceled)

Tuttle, ct al. Ser. No. 10/045,766

Filed: 10/23/2001

Page 6

27. (currently amended) A semiconductor wafer according to Claim 20 wherein: said wafer comprises a silicon carbide substrate and at least one silicon-carbide opitaxial layer;

said devices comprise light emitting diodes or laser diodes that include a p-n junction; and

said metal layers comprise a layer of nickel on said substrate and a layer of a titanium-gold alloy on said nickel layer that form respective ohmic contacts to said devices.

Claims 28-43 (withdrawn)